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ABSTRACT

Refinement and expansion of the focus and scope of existing data gathering services will improve the technical quality and utility of the National Center for Education Statistics (NCES) data programs. Data that support our ability to move toward excellence also support our move toward equity. In order to address policy issues from an equity perspective, data on the following should be collected: (1) public schools and private schools; (2) level and type of non-school support; (3) stability of teacher and pupil populations; (4) access to pre-school; (5) patterns of special education placement and patterns of mobility among programs by students; (6) international comparisons; (7) race by sex information; and (8) levels of aggregation. Certain data can illuminate the quality of the instructional offerings. Specific recommendations related to excellence include: collecting and reporting data on the academic major and minor preparation of certified staff; working with Chief State School Officers to develop a common nomenclature for key academic courses; and working with State Officers to develop standardization in testing that is feasible and appropriate. (JAZ)

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INFORMATION FOR EXCELLENCE AND EQUITY IN EDUCATION

Asa G. Hilliard III

The National Center for Educational Statistics (NCES) has served a vital function for educators and planners. This has been true in spite of the limitations that mar present data gathering efforts. Cooke, Ginsburg and Smith (1985) have written in some detail about what they refer to as the "Sorry State of Educational Statistics." The state of educational statistics is most likely a reflection of certain historical policy orientations more than any deficiency of a technical order.

Americans have had a long and continuing struggle over the place of public education in the nation. (Hilliard, 1984) Should free education be provided to all citizens from kindergarten through twelfth grade? Is there a National role in education and, if so, what is it? We have lived with a system where the ideology of local control of education has been predominant. Initially, both state and national involvement were viewed with reservation. An yet there has been a steady drift toward more and more centralization of support for and centralization of control of education at the state and national levels. An so we find ourselves with a historical tradition of local autonomy and with a growing central tendency toward centralization of support and control. This affects our new data collection needs.

State and national level policymakers and leaders need to have information in order to exercise their functions. Therefore, it is necessary to continue to adjust the data gathering system so as to produce appropriate information. That information must be accurate, reliable, comprehensive, timely, representative, meaningful, and useful.

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Recently, a chart was published by Secretary of Education Terrence Bell. It compared states on various dimensions. The chart triggered one of the most vigorous reactions to date by educators and non-educators alike.

Secretary Bell's chart has accomplished one thing, if nothing else. In an effort to defend themselves and to explain lower than expected state rankings, some Chief State School Officers and others who are sympathetic to their plight have been forced to articulate and to publicize critiques of the system which might otherwise have been heard only by a few. Certainly, the level of debate on these matters has been escalated and that is good. The problem remains, however, how do we take the opportunity presented by such escalations in the level of debate to improve our practices for the benefit of the children.

As has already happened on at least a few occasions, chief state school officers have taken the initiative to clarify and to standardize some practices where possible and appropriate. In the absence of such successful collaboration, the effort to develop valid, reliable, and useful information for national and local policy planning will be a waste.

It is time that we accepted, once and for all, the fact that education of children in the nation is a public matter, just as is the health of the nation. Whether the health services are publicly supported or privately supported, we recognize a clear public interest that requires public oversight. Education is no less a priority. Whether education is supported publicly or privately, the education of all children is in the interest of state and national government levels and to the public at large. This justifies major efforts such as the current effort to develop longitudinal and cross-sectional data for planning and evaluation purposes.

I see no serious problem with current data gathering categories at the NCES. What is needed is more refinement and expansion of existing data gathering services. I will attempt to address this latter point. It is the refinement and expansion of the focus and scope of present series that will improve the technical quality and utility of NCES data programs.

I have chosen to group my responses and recommendations into two general but overlapping categories, excellence and equity. In general, those data that support our ability to move toward excellence are also data that support our move toward equity. The reverse is also true.

I believe that we want a sytem of education that serves all children well. To reach that goal, we need a clear picture of what is going on in the schools.

Clearly, the efforts of the National Center for Educational Statistics is a macro effort. It can serve some needs. Other efforts, research, and site visits, for example, are required to round out the picture. The efforts of the NCES should be evaluated against our requirement for general information.

Equality of Educational Opportunity

While it is unlikely that general inequity in society can be eliminated or reduced significantly by the activities of educators alone, at the very least, educators must struggle to eliminate inequities in educational opportunity. This requires that areas of inequity or potential inequity in schools be illuminated and examined on a regular basis.

Traditional areas where inequities appear to occur in school settings include such things as differential drop-out rates among groups of students; high transiency rates among teachers and students; differentials in the

distribution of teachers in assignments by teacher preparation and experience; differentials in expenditures per child, etc. There is a general absence of information about the wide range of diversity in the treatment of children. Therefore, when academic achievement results are very low for some groups of children, some educators have failed to examine variation within the system of treatment itself in order to pinpoint inequity. Instead, they have engaged in what Ysseldyke and others (1982) called "a search for pathology" in the children as individuals, or even within ethnic or cultural groups of children. A National Academy of Sciences Panel (Heller, Holtzman, and Messick, 1982) has suggested a different strategy. When children fail to perform, there should be, at first, an attempt to rule out the effects of what could be a low quality of educational treatment.

Naturally, no gross national data gathering effort can provide diagnostic information for an individual child or school site in order to design remedial work. On the other hand, at a macro level, it may be possible to spot situations that call for closer examination. For example, if it is shown that teachers who have the greatest amount of academic work in mathematics at the college level are not likely to be assigned to work in low income, poverty areas--this would be a situation that would signal the need for closer scrutiny.

A refinement in data collection indices may provide the possibility for isolating more accurately the effects of educational treatment on students as contrasted with the effects of certain non-school factors. In order to be in a position to address policy issues from an equity perspective more appropriately, the following types of data should be collected.

A. Equate public school and private school data collection. To the extent possible, the same types of data should be collected for both public and private schools. At present, much of the public school data are census data whereas virtually all of the private school data are sample data. Given the wide diversity of types and quality among private schools, there is some question regarding the extent to which small sample of these private schools can be considered to be nationally representative. For example, some private schools maintain very high quality systems pre-K through 12th grade. They begin with what some have described as "college preparatory kindergartens" for a student population that remains relatively stable as well as homogeneous, ethnically, and economically, throughout the full elementary and secondary school period. Other private schools are hardly selective at all. They may also offer a much poorer quality of instruction. There is a need to be able to identify such wide variations in treatment among private schools. Clearly, children vary in terms of the quality of educational experiences to which they have been exposed. By collecting more complete data from private schools, more extensive analyses will become possible. It is not a matter of collecting different data so much as a more intensive data collection effort expanded among private schools.

Recently, much ado has been made over the relative quality of achievement for public school students as compared to private school students. Yet, few data exist that help describe the types of treatment offered to students in the two types of schools. As a result, some analysts have suggested that low capacity students attend public schools.

Specific Recommendation: As much as possible, collect the same data from private schools as from public schools.

B. Level and type of non-school support. Many children in the nation are privileged to have special types of support for their academic growth from nonschool sources. These things are seldom taken into account in the evaluation of strengths and weaknesses in schools, especially the public schools. They are seldom taken into account in the evaluation of student efforts. Yet, any appropriate interpretation of statistics that are collected should be based upon the most accurate information possible. It is especially important to know the actual starting point for individuals and groups in the schools. For example, many parents are able to provide paid tutorials to supplement the public or private school education of their children. The proportion of students who receive such assistance may be very high in some schools and may be nonexistent in others. Such inequities in non-school support cause confounding when interpretations are attempted using data on school effects. Here is another example. Many educators are becoming aware of the rapidly growing gap between students who have access to computers at home and those who do not. Such gaps may also occur between schools that serve poor children and those that serve the affluent. One would expect the effects of the gap to be manifest in such areas as computer literacy, in academic achievement (when computers are used as instructional aids), and in access to word processing capabilities for composition and paper writing. It is important to know the extent to which the use of school-related technologies results in advantages or disadvantages for students who do not have access to them. Accordingly, it is important that the National Center for Educational Statistics collect data on non-school support for academic instruction such as paid tutorials and data processing.

Specific Recommendation: Collect data on access to data processing equipment for computing, word processing, and instructional software. Collect data on amount and type of paid or unpaid after school tutorial or enrichment services.

C. Stability of teacher and pupil populations. Variation occurs in the mobility of teachers and pupils at given school sites. I visited a school recently where students in a sixth grade class were working with the fourth math teacher for the year, even though the school year was only about one half completed. In some schools there are unusually large numbers of migrant or transient children. The meaning of other data such as achievement test scores is affected by such mobility. As a result, it is important for the National Center to collect such data as can give a fair indication of the level of mobility among teachers and students.

Specific Recommendation: Develop indices of mobility for teachers, students, and line site administrators. Collect data on mobility regularly as a part of the census or sampling effort.

D. Access to pre-school. The general weight of professional opinion is that pre-school is highly beneficial for children, at least in terms of preparation for academic success in school. The High Scope Foundation's longitudinal study (____) of the effects of two years of Head Start helped to extend our concept of the benefits of pre-school education to the area of social competence. In other words, not only did the High Scope Foundation study find that later public school academic achievement was higher among children from Head Start Programs than from non-Head Start children but that their social adjustment was better. And among Head Start children who were observed after the point of high school graduation, the academic achievement of pre-schoolers was higher than from non-Head Start students. More Head Start children were

admitted to college, fewer were in trouble with the police, fewer were involved in early pregnancies, and so forth. What is important is that in spite of the near universal agreement among educators about the benefits of quality early education for pre-school for children, there are large numbers of children in America who receive no pre-school at all! Estimates show that only between one-fourth and one-fifth of the children who are eligible for Head Start are actually funded in the program. Moreover, there is wide variation in quality among private pre-school offerings, even for those children who are able to afford pre-school on their own. An appropriate assessment of elementary and secondary education requires that data be kept on the participation of the attendees in pre-school programs and, to the extent possible, data should be kept to show the amount and quality of pre-school received.

I am reminded of an experience that I had recently where five out of twelve kindergartens in a certain city were designated as "developmental kindergartens." As I spoke with educators in that school district, it was clear that, in their minds, there was almost a one-to-one correspondence between the designation "developmental" and the designation" retarded." Here was a case where children were being made to pay the price for the lack of pre-school. They were seen as retarded because of low achievement, even though they had not been given the same opportunity for early education that others had. Yet, there was no attempt on the part of school officials to account for the presence or absence of pre-school experience <u>before</u> designating children as retarded.

At the macro level, an analysis of achievement patterns in the primary and upper elementary grades could well be informed by data on the distribution of

pre-school experiences among students. There are major public policy implications here.

Specific Recommendation: At least for the elementary school years, collect and report data on the amount and type of pre-school experience to which students have been exposed.

E. Patterns of special education placement and patterns of mobility among programs by students. Anyone who is familiar with the picture in special education over the past twenty years would have to be concerned at the shifting definitions and the variation in labeling practices caused by such definitions as populations in special need. For example, there has been an alarming growth nationally in the number of learning disabled children, apparently as a result of successful litigation challenging the validity of assessment of children in the classes for the educable mentally retarded. Yet, studies such as those by Ysseldyke and others (1982) and Glass (1983) show that there is reason to question the validity of the categories as well as the validity of treatments in special education. In order to be able to understand this picture more clearly, certain types data are needed. Among them are the following: To what extent are there "graduates" of special education programs? Is special education assignment really a one-way street, or are students beginning to be returned to regular classrooms after short interventions? Are they being served in regular classes through augmented instruction? Patterns of service in special education are beginning to become quite diverse.

Specific Recommendation: Collect and report data on the mobility of students in and out of special education, by category of service, over time.

F. International comparisons. International comparisons may be helpful in interpreting what we are doing in education and in setting the appropriate expectations for what can be accomplished in education. Often, it is easy to become lost in our own parochial environment and to see as natural things that are quite unique. For example, some of our international competitors appear not to have special education as we know it. They do not have such high numbers of children designated into such categories as educable mentally retarded and learning disabled. Some are able to provide education where the overwhelming majority of their students are able to achieve a high level of "basic skills." Their achievement floors are close to our achievement ceiling. To the extent that these comparisons are valid, they force us to raise serious questions about our estimates of what the general population students in our own nation are capable of achieving.

Specific Recommendation: Collect and report data of the performance of our students on international tests of achievement. Of special interest should be a comparison with the performance of students in industrialized nations.

G. Collecting race by sex information. During a recent study by the National Academy of Sciences (Heller, Holtzman, and Messick, 1982), it was discovered that it was not possible using available educational statistics to do analyses in order to determine certain types of disproportionate placement for children in classes for the mentally retarded. It was possible to determine if there was disproportion when comparing blacks and whites. It was also possible to determine it there was disproportion when comparing males and females. However, as an artifact of the way that data were requested and recorded , it was not possible to determine what was happening by race and sex at the same

time. So, for example, the frequently reported extreme disproportionate placement of black males in classes for the mentally retarded when contrasted with other categories, could not be expressed through currently available statistics. A recommendation was made by the study panel to the Office of Civil Rights that data be collected in a way that would permit race by sex analysis. There are other areas in school experience where it will be important to be able to analyze data by race and sex. For example, there is every indication that the statistics in discipline may be like those in special education placement.

Drop-out rates, disciplinary actions, student achievement, special education placements, etc. should be reported in such a way as to enable analyses to be made both by race and sex simultaneously.

Specific Recommendation: Collect and report all student data so as to permit race by sex analyses to be performed.

H. Levels of Aggregation. A general problem with many and, perhaps most, statistics is that that the results are aggregated at a level that is far too high to permit the best analysis of what is going on. Data aggregated at the state or school district level may serve some useful purposes but, for many purposes, the most significant information is the presence or absence of a pattern of variation among school sites or even among school classrooms, sometimes within a given school site. Then, of course, as has already been recognized by National Center staff, there are times when the variation among individuals is of great interest. Given the capacity of data processing equipment to handle large amounts of data, it is important that data on most school variables be disaggregated to the lowest possible level. For example,

it was not until the effective school research movement that many instances of excellence in education at regular school sites among low income schools were uncovered. For the most part, isolated schools that were "swimming upstream" were buried in aggregated data which tended to suggest that no such schools existed. In fact, analyses of much of the school effectiveness research led to the erroneous conclusion that schools had little or no effect. Questions such as "Do schools work?" were common. It is notable that follwing the effective school research, the question more often is "How do good schools work?" The same may be said of effective teacher research.

Specific Recommendation: Whereever possible, disaggregate data. Provide reports on <u>both</u> aggregated as as disaggregated data.

<u>Educational Quality</u>

During recent years, there has been an extension of the research on effective teaching and effective schools. Many of the research results have not been popularized. A few such ideas as "time-on-task," "engaged-learning-time," "locus-of-control," etc. are part of the common professional language. Yet, many of the things that have been learned from effective teaching and effective schools research cannot be used in state and national policy level discourses. The data that might suggest the need for further inquiry are not collected because of feasibility considerations. In some cases, it would be nearly impossible to collect (on a mass basis) the kind of information that is desirable, such as time-on-task by an individual student. However, there are other cases where the collection of certain data is feasible and can illuminate better the quality of the instructional offerings in the school. Every opportunity should be taken to collect this information. A few examples follow.

A. The academic preparation of teachers. The National Center is already sensitive to the problem of collecting information about teacher preparation by relying upon certification categories. Clearly, there is a lack of unity among the certification categories from state to state. The same may be said for academic majors and minors. However, it may well be that information about the academic majors and minors of teachers would be more revealing than information about the typical certification categories into which teachers fall. This information should be collected. The need for such information should be apparent. There may be equity questions involved in the assignment of teachers according to academic preparation. For instance, let us consider the areas of mathematics and science. In a large city school district that does have a full quota of certified mathematics teachers or science teachers, is there any relationship between the amount of academic preparation in mathematics and the assignment of teachers to low income and high income schools. It would be of interest also to know how the public schools compared with private schools in this regard. It is well known that some private schools emphasize academic preparation over professional preparation, preferring to hire teachers with academic majors and with academic master's degrees. Of course, this is an area where there are many, many questions. What is important is that data be available which would be useful in developing answers to some of those questions. The ease of collection of such information and the availability of national populations for study make it compelling to do so, considering the benefits which may be obtained.

Specific Recommendation: Collect and report data on the academic major and minor preparation of certified staff, disaggregated to the school site level.

B. Describing the school curriculum. Anyone who is even minimally familiar with schools is aware that there is no common nomenclature for classes that would enable a meaningful analysis to take place regarding precisely what content is offered in schools. It may well be that we are destined to be stuck with this problem in some form for quite some time. Nevertheless, it should be possible to improve upon present practices. A report such as that issued by The College Board (1984), Academic Preparation for College: What Students Need to Know and Be Able to Do, should be helpful in attempting to pinpoint the types of topics that may be covered in course content. It should be possible to make a compromise by collecting data that falls somewhere between the level of detail outlined in the College Board report and the gross categories that we normally use. For example, it may be very useful to know how many students have passed course work in algebra and geometry. This may be more important than knowing what the quantitative score of a group of students was on the Scholastic Aptitude Test (S.A.T). At the high school level, it is possible to identify certain key courses such as algebra, general chemistry, foreign language, first-year foreign language, college preparatory English, etc. and to determine what proportion of the students have completed the key courses. This leads us away from dependency on normative data and toward more meaningful criterion data.

Specific Recommendation: Work with Chief State School Officers to develop a common nomenclature for key academic courses. Collect and report data based upon this nonmenclature.

C. An academic success criterion. At present, the use of the S.A.T. or the A.C.T. at the end of a high school program as a measure of academic

achievement is seriously problematic. The absence of meaningful and viable alternative is also seriously problematic.

There is a logic associated with the whole data collection system as it now stands. That logic may also force us inevitably to the conclusion that there is a need for some uniform measure of academic performance at the national level. To my knowledge, no test publisher has ever made claims to the effect that any instrument published by them was indeed a valid universal measure of academic achievement. Rather, users are left to determine (based upon their own analysis) if the match between test content and the academic objectives that they espouse is sufficient.

Another major problem with the use of the S.A.T. and the A.C.T. stems first and foremost from the fact that it is necessary to determine if the tests are considered to be measures of "aptitude" or measures of "achievement." Sometimes, the word "ability" is used to describe tests such as the A.C.T. or S.A.T. However, the use that is made of such tests reflects confounding in the minds of users regarding the nature of the test as either aptitude or achievement. Most often, users attempt to stand in both places at the same time--implicitly claiming that the tests are both aptitude and achievement.

The significance of this (for the National Data collection effort) is that ultimately a choice must be made between these two options. Once having been made, the tests must be evaluated according to the appropriate rules for evaluating the particular type of test that it is. For example, if it is an achievement test, it must evaluated according to the rules for determining its content validity for a high school curriculum. This brings up the awesome problem of validity of the criterion, the school curriculum. Little needs to

be said about the absence of uniformity in the high school curriculum. Standardized testing for a non-standard curriculum is an absurd practice. In the absence of more uniform curricula, the test cannot be content valid.

If it is an aptitude test, then it must be evaluated according to the rules fro determining predictive validity, taking into account the variation in instructional quality that intervenes between initial teaching and final testing. For example, if these tests are regarded as aptitude tests, the results of studies of coaching effects should give real cause for pause. (Messick, 1980) (The Federal Trade Commission Study, 1979) It has been shown that standardized tests scores can be raised significantly by well-designed, short-term coaching courses. This should not be the case if the test is a test of "aptitude." Perhaps, the only reasonable resolution to this problem is to call upon Chief State School Officers to take the lead in establishing the uniformity in academic goals at a basic level that would permit test publishers to develop tests based on common understandings.

Such an approach is not without its dangers--the most obvious of which is the loss of local control over curriculum decision making. The issue here is more one of a policy matter than a technical one. Until we get to the point of considering whether certain important educational objectives can be measured by traditional forms of paper and pencil, multiple choice testing. At that point, another policy issue presents itself: What costs will educators accept for the quality assessment of academic achievement?

Many things in the national data collection plan are linked to achievement test results. Achievement test results, for better or for worse, are considered to be the "bottom line" in the data collection effort. Therefore, the stakes are very high. There is a critical need for valid outcome measures.

Specific Recommendation: Work with Chief State School Officers to develop standardization in testing that is feasible and appropriate. Collect and report achievement data from these new measures.

General

In general, the present categories of data collection are appropriate. Reliability and validity must be the major concern. This is the main way to improve present data gathering efforts.

Strong support should be given to the High School and Beyond Survey. It is one of the few places where individual students are tracked. Moreover, as a longitudinal study, it will be a rare contribution to our knowledge base.

The Library/Media Center Survey is important. However, it is not clear that qualitative judgments can be made from the quantitative data to be collected. If there were a report that summarized the holdings by titles within categories, it would be much easier to perform evaluations of the quality of holdings. For example, what is the pattern of holdings in typical schools. Summative information on these patterns is desirable.

The Twentieth Century

One of the most interesting things about progress is that the more some things change the more others stay the same. Most of us have witnessed phenomenal changes in the availability of technology such as television, computers, genetic engineering, space travel, etc. Indeed, the content of school curricula now reflect this new information. And yet the requirements for a basic elementary and high school education of quality are really not all that different today than they were decades ago. As we try to prepare children "for life" or for the "work of work," we find that both of these

areas call for students who are skilled ar reading, computing, analytical and synthetic thinking, written and oral expression, and a whole host of "liberal arts skills." (Adler, _____)

We should have learned by now that the best preparation for the world of work at the high school level is a good sound academic and social educational experience. First, high technology in the workplace does not seem to increase the call for "high tech" jobs. (Levine and Rumberger, 1983). The U. S. Department of Labor confirms the fact that the growth areas for employment are in the low-skilled service sectors of the economy. It is hard to train students for specific jobs that matter at the high school level. Second, the advanced level jobs and personal satisfaction in life require a sound general education, not different in kind than that which we have described many times before. (Adler, ____)

The best role of data gathering on education for public policy decision making is a role that supports the most refined description possible of what takes place in the schools. It is essentially an operation that functions in support of quality control and equity guarantees.

Ultimately, our mission in education must be to serve our people. We do that by being cognizant of the demands of the economy. But we can never neglect the thing that we have always heard articulated. A democratic society is dependent upon an educated citizenry. This means that our vision for the nation's schools is that they are instruments that build the capacity of students to think. The schools are instruments that confront them with the important things that citizens must ponder. In this regard, the twentieth century is not unlike previous centuries, except perhaps the gap betwen or ideals and reality can be closed if we can see reality more clearly.

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